

#5 exploration

300,300 - 3 partitions

exact value 295,391.8

over by 4908.2 or  $\approx 1.7\%$

- 6 partitions  
294,690.7  $\approx \underline{\underline{0.2\%}}$

1	2	3	4
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→ 12 partition  
295,415  $\approx 0.008\%$

5.1

- Rectangular Approximation Method - LRAM, RRAM, MRAM

5.2

- Riemann Sum

$$\lim_{n \rightarrow \infty} \sum_{k=1}^n f(c_k) \Delta x = \int_a^b f(x) dx$$

- NINT (calc.)

5.3

- Properties of Definite Integrals, p. 285

- Avg. value  $av(f) = \frac{1}{b-a} \int_a^b f(x) dx$

- Mean Value Thrm  $f(c) = \frac{1}{b-a} \int_a^b f(x) dx$

5.4

- Fundamental Thm. of Calc.

Part 1:  $\frac{d}{dx} \int_a^x f(t) dt = f(x)$

Part 2:  $\int_a^b f(x) dx = F(b) - F(a)$

- Total Area vs. Net Area (Dist traveled vs. displacement)
- Analyze graphs with Antiderivatives (like #57)

5.5

$$\bullet \text{ Trap. Approx} = \frac{h}{2} (y_0 + 2y_1 + 2y_2 + \dots + 2y_{n-1} + y_n)$$

$$\bullet \text{ Trap} = \frac{L_{RAM} + R_{RAM}}{2}$$

$$\bullet \text{ Simpson's Rule, } s = \frac{h}{3} (y_0 + 4y_1 + 2y_2 + 4y_3 + \dots + 2y_{n-2} + 4y_{n-1} + y_n)$$

$$h = \frac{b-a}{n}$$

## Homework

- Do Representative Problems
- Read over chapter, bring Questions
- Show up 7:15 Wed.